

APPENDIX L

BIOLOGICAL CONSTRAINTS SURVEY



September 18, 2012

Mr. Jim Walton, ACLS
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VIA EMAIL
landuseagent@yahoo.com

Subject: Biological Constraints Survey for the Rancho Las Lomas Project, Orange County, California

Dear Mr. Walton:

This Letter Report presents the findings of a biological constraints survey for the Rancho Las Lomas project site (hereinafter referred to as the "project site") in unincorporated Orange County, California. BonTerra Consulting Senior Ecologist Amber Oneal and Ecologist/Regulatory Technician Allison Rudalevige conducted a general plant and wildlife survey concurrently with vegetation mapping on June 4, 2009. The purpose of the survey was to evaluate potential biological constraints on project development. Prior to the survey, Ms. Oneal, Ms. Rudalevige, Gary Medeiros, and Melissa Howe of BonTerra Consulting; Dave Oatis of Firesafe; and James Walton (representing the Project Applicant) met to discuss the fuel modification plan for the project site.

The California Native Plant Society's (CNPS') Inventory of Rare and Endangered Vascular Plants of California (CNPS 2009, 2012) and the California Department of Fish and Game's (CDFG's) California Natural Diversity Database (CDFG 2009, 2012) were reviewed prior to the survey to identify special status plants, wildlife, and habitats known to occur in the vicinity of the project site. Database searches included the U.S. Geological Survey's (USGS') El Toro and Santiago Peak 7.5-minute quadrangles.

Vegetation was mapped in the field on a 1 inch equals 50 feet (1"=50') scale color aerial. In the event the tree canopy covered another vegetation type (e.g., oak canopy over a road) the vegetation was mapped as the corresponding vegetation type for the canopy. Nomenclature for vegetation types generally follows that of *The Habitat Classification System Natural Resources Geographic Information System (GIS) Project* (Gray and Bramlet 1992).

PROJECT LOCATION

The project site is located just east of the community of Portola Hills in unincorporated Orange County, California (Exhibit 1). Specifically, the project site is located at 19191 Lawrence Canyon Road, which is immediately west of the intersection of El Toro Road, Santiago Canyon Road, and Live Oak Canyon Road. The project site is located on the USGS' Santiago Peak quadrangle at Township 5 South, Range 7 West, Section 33 (Exhibit 2). Aliso Creek, a blueline stream, runs north to south through the project site generally along its eastern boundary adjacent to Santiago Canyon Road. Topography on the project site is characterized by a gentle to moderately



northeast-facing hillside sloping down to Aliso Creek. The elevation ranges from approximately 1,115 feet to 1,350 feet above mean sea level (msl); some portions of the project site have been graded level to support existing and future structures. Soils on the project site are mapped as Alo clay (30–50 percent slopes); Calleguas clay loam (50–75 percent slopes, eroded); Cienega sandy loam (15–30 percent slopes); and Sorrento loam (2–9 percent slopes).

The project site is an existing event facility primarily used for weddings. A series of buildings, patios, decks, and staircases are interspersed with the woodlands in the eastern half of the project site. The facility also contains a zoological garden with enclosures for llamas (*Lama* sp.), zebras (*Equus* sp.), and tigers (*Panthera tigris*) as well as a reptile house and several aviaries. Parking lots, storage, and support structures are located on the slopes in the western portion of the project site. Land uses adjacent to the project site include residential to the west, north, and northeast, and transportation (i.e., Santiago Canyon Road) and open space to the east and south.

The proposed project would permit existing structures on the project site; facilitate the completion of a gazebo (Structure A–C); and allow three bridge/culvert structures to be replaced with free-span bridges on the project site. The purpose of this report is to analyze impacts of the proposed gazebo; the replacement of three bridge/culvert structures with three free-span bridges; and the implementation of fuel modification requirements.

REGIONAL PLANS

Natural Communities Conservation Plan

The County of Orange, in conjunction with the State and federal resource agencies, local jurisdictions, utility companies, the Transportation Corridor Agencies, and major private landowners, approved the Natural Communities Conservation Planning Program/Habitat Conservation Plan (NCCP/HCP) for the Central/Coastal Subregion on July 10, 1996, through the execution of the NCCP/HCP Implementation Agreement (NCCP/HCP IA). This plan is intended to ensure the long-term survival of the coastal California gnatcatcher (*Poliioptila californica californica*) and other special status, coastal sage scrub-dependent plant and wildlife species in accordance with State-sanctioned NCCP program guidelines. The project site occurs within the Central Subarea of the NCCP/HCP and therefore, the project would be required to comply with the provisions of the NCCP/HCP and the associated IA. The project site is designated “Non-reserve Open Space”. The area along Aliso Creek just south of the project site is also designated a “Habitat Linkage” and is part of the “Proposed NCCP Reserve” (Exhibit 3).

Foothill/Trabuco Specific Plan

The project site is also located within the *Foothill/Trabuco Specific Plan* (FTSP, County of Orange 1991) area and is designated as the “Rancho Las Lomas District” as part of the Specific Plan’s Land Use Districts designations. The goal of the FTSP is to “set forth goals, policies, land use district regulations, development guidelines, and implementation programs in order to preserve the area’s rural character and to guide future development in the Foothill/Trabuco area” (County of Orange 1991). Specific Plan guidelines include a series of resource overlays, including an “Oak Woodland Overlay”, “Wildlife Corridors” and “Streambeds”, which address the protection and preservation of biological resources. Therefore, the project would also be required to comply with the provisions of the Specific Plan.

SURVEY RESULTS

Vegetation Types

Vegetation types and other areas on the project site consist of sagebrush sage scrub, toyon-sumac chaparral, southern willow scrub, sycamore-oak riparian forest, coast live oak woodland, coast live oak woodland/ornamental, southern coastal needlegrass grassland, ruderal, vineyards and orchards, ornamental, disturbed, and developed (Exhibit 4).

Sagebrush sage scrub occurs in one small patch (approximately 15 feet by 40 feet) along a slope adjacent to a disturbed area in the northwestern portion of the project site. This vegetation type consists of a monotypic stand of California sagebrush (*Artemisia californica*).

Toyon-sumac chaparral occurs in a small patch (approximately 30 feet by 40 feet) on a slope adjacent to a road in the western portion of the project site. This patch is dominated by toyon (*Heteromeles arbutifolia*) and also contains sapling coast live oaks (*Quercus agrifolia*).

Southern willow scrub occurs in a small patch (approximately 30 feet by 40 feet) adjacent to a road and surrounded by the coast live oak woodland/ornamental vegetation type in the western portion of the project site. This vegetation type consists of red willow (*Salix laevigata*). The area is not associated with Aliso Creek.

Sycamore-oak riparian forest occurs along Aliso Creek along the eastern boundary of the project site. This vegetation type is dominated by a mix of western sycamores (*Platanus racemosa*) and coast live oaks. Most of the area has limited understory vegetation because the area is interspersed with event facilities. However, some areas contain ornamental ground cover such as greater periwinkle (*Vinca major*).

Coast live oak woodland occurs in much of the upland areas of the project site and is dominated by coast live oak. Coast live oak woodland/ornamental is also dominated by coast live oaks, but the oaks are mixed with ornamental trees including fan palm (*Washingtonia* sp.), pine (*Pinus* spp.), and olive (*Olea* sp.).

Southern coastal needlegrass grassland occurs on one slope in the northwestern corner of the project site. This vegetation type is dominated by needlegrass (*Stipa* [*Nassella*] sp.), but also contains non-native species such as wild oat (*Avena* sp.) and black mustard (*Brassica nigra*). This area appears to have been periodically mowed.

Ruderal areas occur in the southwestern portion of the project site. These areas appear to have been previously disturbed and appear to be periodically mowed. These areas are dominated by non-native, weedy species including wild oat, black mustard, ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis* ssp. *rubens*), and Italian thistle (*Carduus pycnocephalus*).

Vineyards and orchards occur in a few small areas of the project site, primarily near existing developed areas. The vineyards contain grapes (*Vitis* sp.) and the orchards consist of orange (*Citrus* sp.) groves.

Ornamental vegetation occurs throughout the project site. These areas consist of a mixture of ornamental trees, shrubs, herbs, and grasses including fan palm, jacaranda (*Jacaranda mimosifolia*), oleander (*Nerium oleander*), Japanese honeysuckle (*Lonicera japonica*), roses (*Rosa* sp.), and a few small areas of turf grass.

Disturbed areas consist of the dirt roads, dirt parking areas, and other disturbed areas cleared of vegetation. Many of the disturbed areas contain piles of trash, unused equipment, and other items. Developed areas consist of the existing buildings, walkways, bridges, and paved roads on the project site.

Wildlife Habitat

The project site provides moderate quality habitat for wildlife species that are characteristic of oak and sycamore woodlands. The project site contains a native overstory with mature trees that provide high quality habitat for many wildlife species. However, the native understory has been cleared for fuel modification in many areas, which lowers the habitat value for some species. Additionally, because structures are interspersed within the woodlands, there is a high amount of human activity present during facility events, which may discourage use by some native species.

Aliso Creek is an ephemeral creek that is typically dry except after storm events; therefore, no fish species would be expected to occur on the project site. No amphibian species were observed during the biological survey. Amphibian species expected to occur on the project site include the western toad (*Anaxyrus [Bufo] boreas*), California treefrog (*Pseudacris [Hyla] cadaverina*), and Baja California [Pacific] treefrog (*Pseudacris [Hyla] regilla*). The western fence lizard (*Sceloporus occidentalis*) was the only reptile species observed in native areas on the project site. Other reptile species expected to occur on the project site include garden slender salamander (*Batrachoseps major major*), side-blotched lizard (*Uta stansburiana*), California striped racer [whipsnake] (*Coluber [Masticophis] lateralis*), and gopher snake (*Pituophis catenifer*). A non-native red-eared slider (*Trachemys scripta elegans*) was observed in a landscaped pond area near the existing structures.

Bird species observed on the project site include Allen's hummingbird (*Selasphorus sasin*), acorn woodpecker (*Melanerpes formicivorus*), downy woodpecker (*Picoides pubescens*), Pacific-slope flycatcher (*Empidonax difficilis*), western scrub-jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltiriparus minimus*), Bewick's wren (*Thryomanes bewickii*), European starling (*Sturnus vulgaris*), spotted towhee (*Pipilo maculatus*), California towhee (*Melospiza [Pipilo] crissalis*), song sparrow (*Melospiza melodia*), hooded oriole (*Icterus cucullatus*), house finch (*Carpodacus mexicanus*), and lesser goldfinch (*Spinus [Carduelis] psaltria*).

Small mammal species observed or expected to occur on the project site include western gray squirrel (*Sciurus griseus*), California ground squirrel (*Spermophilus beecheyi*), dusky-footed woodrat (*Neotoma fuscipes*), and deer mouse (*Peromyscus* sp.). Medium- to large-sized mammals observed or expected to occur on the project site include Audubon's cottontail (*Sylvilagus audubonii*), coyote (*Canis latrans*), northern [common] raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and bobcat (*Lynx rufus*). Bat species expected to occur on the project site include big brown bat (*Eptesicus fuscus*), California bat [myotis] (*Myotis californicus*), and canyon bat [western pipistrelle] (*Parastrellus [Pipistrellus] hesperus*).

Wildlife Movement

Within large open space areas in which there are few or no man-made or naturally occurring physical constraints to wildlife movement, wildlife corridors may not yet exist. However, once open space areas become constrained and/or fragmented as a result of urban development or the construction of physical obstacles (such as roads and highways), the remaining landscape features or travel routes that connect the larger open space areas become corridors as long as

they provide adequate space, cover, food, and water and do not contain obstacles or distractions (e.g., man-made noise, lighting) that would generally hinder wildlife movement.

The project site is adjacent to the Cleveland National Forest. Nearby open space and natural drainage areas include Live Oak Canyon to the northeast, Whiting Ranch Wilderness Park to the northwest, the Cleveland National Forest to the north, and O'Neill Regional Park to the southeast (Exhibit 3). Wildlife are expected to move along ridgelines, drainages, and trails between these canyons and larger areas of open space. Urbanization extends to the western boundary of the project site and a residential development also occurs to the northeast, so wildlife would not be expected to move towards these areas. The project site provides a corridor through these developments; wildlife would be expected to utilize the undeveloped open space in the National Forest more often than they would be expected to cross Santiago Canyon Road and move through the mix of development and oak woodlands on the project site. In addition, there is a high amount of human activity on the project site that may discourage use of the project site for some wildlife species. Large mammal movement was evaluated in Rancho Las Lomas Large Mammal Movement Evaluation (Loe 2004), which concludes that movement in the Upper Aliso Canyon Watershed above Cook's Corner (i.e., the intersection of El Toro Road, Live Oak Canyon Road, and Santiago Canyon Road) has been severely impacted by roads and numerous developments. Therefore, Aliso Creek is expected to be used to a limited extent for wildlife movement, typically by vagile species (e.g., birds, coyotes, and others).

The portion of Aliso Creek south of the project site is identified as a "Habitat Linkage" in the Central/Coastal Subregion NCCP/HCP (County of Orange 1996). The portion of Aliso Creek on the project site was not identified as a wildlife corridor in the FTSP.

Special Status Vegetation Types

Special status vegetation types are considered to be "depleted" habitats by the CDFG (CDFG 2009, 2012) or local jurisdictions. These vegetation types may be protected by ordinances, codes, regulations, or planning policies.

Coastal Sage Scrub

Coastal sage scrub vegetation types are declining throughout Southern California. They support many special status plant and wildlife species, and the ecological function in Southern California's remaining coastal sage scrub is threatened by habitat fragmentation, invasive non-native species, livestock grazing, off-highway vehicles, altered fire regime, and perhaps air pollution. A very small monotypic patch of sagebrush sage scrub occurs in the northwestern portion of the project site; this patch is isolated from larger areas of sage scrub.

Riparian/Jurisdictional Areas

Riparian vegetation occurs along perennial or intermittent drainages that are typically subject to seasonal flooding. Most natural riparian vegetation in Southern California has been lost or degraded by land use conversions to agricultural, urban, and recreational uses; channelization for flood control; sand and gravel mining; groundwater pumping; water impoundments; and various other changes. It is estimated that as much as 95 to 97 percent of historic riparian habitats in Southern California have been lost (Faber et al. 1989). In general, riparian vegetation can provide important biological functions for an ecosystem such as cover and water sources for wildlife; filtration of runoff water and groundwater recharge; and flood control and sediment stabilization. Riparian vegetation on the project site occurs along Aliso Creek and is comprised of sycamore-oak riparian forest with some coast live oak/ornamental. A small patch of southern

willow scrub occurs on the slope in the western portion of the project site, although this patch is not associated with Aliso Creek.

Drainages, which may include wetlands and “Waters of the U.S.”, are protected under Section 404 of the Clean Water Act (CWA) and are under the jurisdiction of the U.S. Army Corps of Engineers (USACE). “Waters of the U.S.” include navigable coastal and inland waters, lakes, rivers, streams and their tributaries; interstate waters and their tributaries; wetlands adjacent to such waters; intermittent streams; and other waters that could affect interstate commerce. A CWA Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB) is required before the USACE will issue a Section 404 permit. In addition, if drainages on the project site meet the criteria established by Section 1600 of the *California Fish and Game Code*, the CDFG may require a Streambed Alteration Agreement prior to any modification of the bed, bank, or channel of streambeds in the survey area.

Aliso Creek, a blueline stream, runs from north to south along the eastern boundary of the project site. On October 8, 2008, BonTerra Consulting conducted a jurisdictional delineation to define the extent of resources under the jurisdiction of the USACE, the CDFG, and the RWQCB. The jurisdictional delineation determined that a total of 0.495 acre of USACE jurisdictional non-wetland “Waters of the U.S.”, of which 0.035 acre is open water, occurs on the project site and 2.479 acres of CDFG jurisdiction occurs on the project site (BonTerra Consulting 2012a). Aliso Creek has also been identified as a streambed in the FTSP.

Oak Woodland

Oak riparian forests are declining throughout California due to residential, commercial, and industrial development. Oak riparian forests are an important resource in California that provides wildlife habitat in addition to aesthetic, cultural, economic, and environmental value. The majority of the project site consists of oak woodlands, including sycamore-oak riparian forest, coast live oak woodland, and coast live oak woodland/ornamental.

The project site is located within the FTSP area. This plan protects trees that exceed five inches in diameter and requires a tree survey to map and measure trees that could be impacted by development. An oak tree survey was conducted in 2009 to comply with conditions in the FTSP. A total of 77 coast live oak trees with a diameter at breast height (dbh) greater than 5 inches were recorded on the project site (BonTerra Consulting 2012b).

Native Grassland

Native grasslands have declined by approximately 99 percent in their historic range in California (Noss and Peters 1995). In the mid-nineteenth century, heavy grazing by cattle and sheep caused native perennials to be replaced by fast-growing annual grasses, which are able to take advantage of spring rains and produce seeds before the dry heat of summer. The native perennial grasses, which are more palatable to livestock than annuals, were damaged by grazing and trampling. Native grasslands have also been lost to development and conversion to agriculture. A small area of southern coastal needlegrass grassland occurs on a slope in the northwestern portion of the project site.

Special Status Plant and Wildlife Species

Plants or wildlife may be considered “special status” due to declining populations, vulnerability to habitat change, or restricted distributions. Certain special status species have been listed as Threatened or Endangered under the State and/or Federal Endangered Species Acts.

Special Status Plants

Several special status plant species have been reported in the vicinity of the project site (CNPS 2009, 2012; CDFG 2009, 2012). Three of these species are federally and/or State-listed Threatened or Endangered species: thread-leaved brodiaea (*Brodiaea filifolia*), slender-horned spineflower (*Dodecahema leptoceras*), and Santa Monica dudleya (*Dudleya cymosa* ssp. *ovatifolia*). Slender-horned spineflower and Santa Monica dudleya are not expected to occur on the project site due to lack of suitable habitat. Thread-leaved brodiaea has been reported from a remnant patch of native grassland between Aliso and Serrano Creeks approximately 1.5 miles southwest of the project site (CDFG 2009). A limited amount of suitable habitat for thread-leaved brodiaea is present on the project site within the southern coastal needlegrass grassland.

Several CNPS List 1B and List 2 species have been reported from the vicinity of the project site (CNPS 2009): Tecate cypress (*Hesperocyparis* [*Callitropsis*] *forbesii*), intermediate mariposa lily (*Calochortus weedii* var. *intermedius*), many-stemmed dudleya (*Dudleya multicaulis*), heart-leaved pitcher sage (*Lepechinia cardiophylla*), Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*), felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*), Hall's monardella (*Monardella macrantha* ssp. *hallii*), mud nama (*Nama stenocarpum*), chaparral [Peninsular] nolina (*Nolina cismontane*), Allen's pentachaeta (*Pentachaeta aurea* ssp. *allenii*), and Santiago Peak phacelia (*Phacelia keckii* [*P. suaveolens* ssp. *keckii*]). A limited amount of suitable habitat for the intermediate mariposa lily and many-stemmed dudleya is present on the project site in the southern coastal needlegrass grassland. The other species would not be expected to occur due to lack of suitable habitat or because they are not known from the project region.

Although several CNPS List 3 and 4 species are also known from the vicinity, these species are not typically considered constraints to development.

Special Status Wildlife

Several special status wildlife species have been reported from the project vicinity (CDFG 2009); however, only Threatened or Endangered species typically present constraints on development. The following federally and/or State-listed Endangered or Threatened species have been reported from the vicinity of the project site: Riverside fairy shrimp (*Streptocephalus woottoni*), arroyo toad (*Anaxyrus* [*Bufo*] *californicus*), coastal California gnatcatcher, and least Bell's vireo (*Vireo bellii pusillus*). No suitable habitat for fairy shrimp or arroyo toad was observed on the project site; therefore, Riverside fairy shrimp and arroyo toad are not expected to occur on the project site. The southern willow scrub and sagebrush sage scrub on the project site are not extensive enough to provide habitat for the least Bell's vireo and coastal California gnatcatcher, respectively; therefore, these species are not expected to occur on the project site.

PROJECT IMPACTS

PROJECT DESCRIPTION

The proposed project would permit existing structures on the project site; facilitate the completion of a gazebo (Structure A-C); and replace three existing bridges with three free-span bridges on the project site. Project impacts analyzed in this Report include replacement of existing bridge structures; fuel modification maintenance activities; and the construction of the gazebo. Bridge replacement activities consist of (1) two existing bridges (Bridges 1 and 2); (2) two existing footbridges (Footbridges A and B); and (3) removal of cement in small areas of the Aliso Creek bottom (Exhibits 5 and 6). Impacts for Bridge 1 would include temporary impacts from the demolition and removal of the existing bridge/culvert structure and permanent shade

impacts associated with the installation of the permanent free-span bridge. Impacts for Bridge 2 would include temporary impacts from the demolition and removal of the existing bridge/culvert structure and permanent shade impacts resulting from the installation of a free-span bridge. Impacts for Footbridge A would consist of temporary impacts from the demolition and removal of the existing bridge/culvert structure and permanent shade impacts associated with its replacement as a free-span bridge. Footbridge B has already been converted to a free-span bridge. However, impacts associated with that conversion included temporary impacts from the demolition and removal of the existing bridge/culvert structure and permanent shade impacts associated with its replacement as free-span bridge. Cement is currently present in a portion of the creek bottom; the removal of this discharge from the creek bottom would be considered a temporary impact.

Fuel modification guidelines require that brush management be maintained as-needed on an ongoing basis within specific zones surrounding each existing and proposed structure. Zone A (within 20 feet of structures) requires that all structures use non-combustible material. Zone B (a minimum of 50 feet beyond Zone A) is called the "wet zone" and requires 100 percent removal of native shrubs that are considered a fire hazard; however, trees within this zone do not have to be removed. Zone C (50 feet beyond Zone B or at variable widths) is called the "dry zone" and requires 50 percent thinning of native shrubs that are considered a fire hazard; however, trees within this zone do not have to be removed. Zone D (50 feet beyond Zone C) is also called the "dry zone" and requires 30 percent thinning of native shrubs that are considered a fire hazard; however, trees within Zone D do not have to be removed. A ten-foot-wide Roadside Clearance Zone (irrigated landscape) will be located along project access roads outside of Zones A through C. The existing and proposed structures and their respective fuel modification zones are shown in Exhibit 5; an impact boundary was developed from project plans provided by Andrade Architects and the Fuel Modification Plan provided by Firesafe.

A total of 0.02 acre of vegetation would be impacted by construction of a gazebo and bridge/culvert replacement activities, and an additional 10.72 acres would be impacted through fuel modification (Table 1, Exhibit 6). A discussion of impacts on special status biological resources is included below.

**TABLE 1
VEGETATION TYPES ON THE PROJECT SITE**

Vegetation Type	Existing (acres)	Future Structures (acres)	Permanent Fuel Modification (acres)	Total Impact ^a (acres)
Sagebrush Sage Scrub	0.02	0.00	0.00	0.00
Toyon-Sumac Chaparral	0.03	0.00	0.00	0.00
Southern Willow Scrub	0.03	0.00	0.00	0.00
Sycamore-Oak Riparian Forest	2.99	0.00	2.64 ^b	2.64
Coast Live Oak Woodland	4.38	0.00	1.97 ^b	1.97
Coast Live Oak Woodland/Ornamental	2.35	0.00	1.69 ^b	1.69
Southern Coastal Needlegrass Grassland	0.57	0.00	0.07 ^c	0.07
Ruderal	2.35	0.00	0.14	0.14
Vineyards and Orchards	0.47	0.00 ^d	0.25	0.25
Ornamental	4.67	0.00	1.80	1.80
Disturbed	1.75	0.02	0.68	0.70
Developed	2.47	0.00	1.48	1.48
Total	22.08	0.01	10.72	10.74
^a The total impact does not show the impacts for bridges and concrete removal separately because they are already shown as impacts within the fuel modification zone impact. Detailed bridge/concrete removal impacts are shown below in Tables 2 and 3. These impacts would occur along Aliso Creek in the understory of sycamore-oak riparian forest, coast live oak woodland, and coast live oak woodland/ornamental vegetation types (Exhibit 6). ^b Although future understory growth may be removed in fuel modification areas, none of the native trees will be removed. Native understory species approved by Orange County Fire Authority (OCFA) will be planted in fuel modification areas in Aliso Creek in accordance with the Habitat Mitigation and Monitoring Plan (HMMP). ^c Although this area is within the fuel modification zone, herbaceous species often do not need to be removed from fuel modification areas. A total of 0.07 acre is within Zone C and may be mowed. ^d Vineyards and Orchards impacts are 0.007 acre.				

IMPACTS AND MITIGATION

Special Status Vegetation Types, Plants, and Wildlife Species

The understory may be removed in fuel modification areas; however, none of the native trees would be removed for fuel modification purposes. Native understory species approved by the Orange County Fire Authority (OCFA) would be planted in fuel modification areas within Aliso Creek in accordance with the HMMP.

Coastal Sage Scrub

Sagebrush sage scrub will not be removed by the project. Construction-related Minimization Measures related to the NCCP/HCP IA would not apply to the proposed project because no coastal sage scrub would be impacted.

Riparian/Jurisdictional Areas

Based on the most current project design, a total of approximately 0.074 acre of non-wetland "Waters of the U.S." would be impacted by the proposed project (Table 2). This includes less than 0.001 acre due to permanent structural impacts, 0.009 acre due to impacts from shade of proposed bridges, and 0.065 acre temporarily impacted by the removal of existing bridges and the road fill. Based on the most current project design, a total of approximately 0.109 acre

under the jurisdiction of the CDFG will be impacted by the proposed project (Table 3). This includes less than 0.001 due to permanent structural impact, 0.029 acre due to impact from shade of proposed bridges, and 0.080 acre temporarily impacted by the removal of existing bridges and the road fill. Impacts on riparian habitat (i.e., sycamore-oak riparian forest) would be considered significant due to the high value of these vegetation types. Impacts on riparian vegetation are generally calculated and mitigated based on the identified jurisdictional area. Note that the OCFA has agreed that none of the trees on the project site need to be removed; therefore, the fuel modification would only impact the understory of these vegetation types. The woodland understory within jurisdictional areas consists primarily of non-native ornamental species. As most of these species have been removed and will be replaced with suitable native woodland understory species that are non-flammable as part of the proposed riparian habitat mitigation program, fuel modification maintenance activities will not be required within jurisdictional areas.

TABLE 2
IMPACTS TO USACE JURISDICTIONAL WATERS

"Waters of the U.S."	Permanent Impact (Acre)		Temporary Impact (Acre) ^a	Total Impact (Acre)
	Structural	Shade		
Bridge 1	—	0.004	0.008	0.012
Bridge 2	0.000 ^b	0.001	0.014	0.015
Foot Bridge A	—	0.001	0.004	0.005
Foot Bridge B	—	0.002	0.0000 ^d	0.002
Concrete Wall Footing	0.000 ^c	0.001	0.0000 ^e	0.001
Cement	—	—	0.039	0.039
Total	0.000	0.009	0.065	0.074
^a Temporary impacts for bridges consist of removal of existing bridges. ^b Structural impact is 0.0002 acre. ^c Structural impact is 0.0006 acre. ^d Structural impact is 0.0003 acre. ^e Structural impact is 0.0006 acre.				

TABLE 3
IMPACTS TO CDFG JURISDICTIONAL WATERS

CDFG Jurisdiction	Permanent Impact (Acre)		Temporary Impact (Acre) ^a	Total Impact (Acre)
	Structural	Shade		
Bridge 1	0.0000	0.010	0.024	0.034
Bridge 2	0.0000	0.008	0.012	0.020
Foot Bridge A	0.0000	0.005	0.005	0.010
Foot Bridge B	0.0000 ^b	0.006	0.000	0.006
Concrete Wall Footing	0.0000 ^c	0.000	0.000	0.000
Cement	0.0000	0.000	0.039	0.039
Total	0.000	0.029	0.080	0.109
^a Temporary impacts for bridges consist of removal of existing bridges. ^b Structural impact is 0.0003 acre. ^c Structural impact is 0.0006 acre.				

The proposed project includes a riparian habitat mitigation/restoration element that will serve as retroactive mitigation for the loss of jurisdictional resources that resulted from the previously conducted vegetation removal. As noted above, the proposed mitigation consists of establishing suitable native woodland plant species within the Aliso Creek drainage. The HMMP that contains the following items will be prepared:

- **Responsibilities and qualifications of the personnel to implement and supervise the plan.** The responsibilities of the Landowner, Specialists, and Maintenance Personnel that would supervise and implement the plan will be specified.
- **Site preparation and planting implementation.** Site preparation will include (1) protection of existing native species; (2) trash and weed removal; (3) native species salvage and reuse (i.e., duff); (4) soil treatments (i.e., imprinting, decompacting); (5) temporary irrigation installation; (6) erosion-control measures (i.e., rice or willow wattles); (7) seed mix application; and (8) container species planting. Plant materials will be obtained from local sources (i.e., from sources within 30 miles of the project site).
- **Schedule.** A schedule will be developed which includes planting in late fall and early winter (i.e., between October 1 and January 30).
- **Maintenance plan/guidelines.** The Maintenance Plan will include (1) weed control; (2) herbivory control; (3) trash removal; (4) irrigation system maintenance; (5) maintenance training; and (6) replacement planting.
- **Monitoring Plan.** The Monitoring Plan will include (1) qualitative monitoring (i.e., photographs and general observations); (2) quantitative monitoring (i.e., randomly placed transects); (3) performance criteria, as approved by the resource agencies; and (4) guidelines for developing regular site progress reports and annual status reports. The site will be monitored and maintained for up to ten years to ensure successful establishment of riparian habitat within the restored areas. Annual status reports will be submitted to the USACE and the CDFG each year throughout the monitoring and maintenance program.
- **Long-term preservation.** Long-term preservation of the site will also be outlined in the HMMP to ensure the mitigation site is not impacted by future development.

Oak Woodlands

The proposed project would impact 2.64 acres of sycamore-oak riparian forest, 1.97 acres of coast live oak woodland, and 1.69 acres of coast live oak woodland/ornamental. As mentioned above, the OCFA has agreed that none of the trees on the project site need to be removed for fuel modification purposes; therefore, the fuel modification would only impact the understory of these vegetation types. Oak trees may incur indirect impacts (e.g., dust accumulation, changes in hydrology, altered water quality, soil compaction, and pruning) resulting from any construction adjacent to or within their dripline. Impacts on oak trees would be considered significant and would require mitigation based on requirements in the FTSP. Mitigation would consist of the following:

- An *Oak Management and Preservation Plan (OMPP)* (BonTerra Consulting 2012b) was developed in compliance with FTSP requirements to summarize tree survey results and discuss management guidelines that would protect preserved oak resources during project construction and ongoing facility operation. No oak trees will be removed as a result of project construction.

Any oak trees that are inadvertently removed during project construction will be replaced in compliance with FTSP and CDFG requirements. Prior to removal of any oak trees on the project site, a Tree Replacement strategy will be developed and will confirm the final number of trees that will be impacted; identify the tree planting location; and describe installation, maintenance, and monitoring requirements for successful establishment of replacement oak trees. Any required tree replacement would be accomplished within the Aliso Creek drainage and would be addressed in the HMMP. If tree impacts do not occur, tree replacement will not be required and adding the tree replacement component to the HMMP will not be necessary.

As described in the HMMP, indirect impacts to preserved individual oak trees and oak woodland areas will be avoided by implementing the following resource protection measures during project construction and during ongoing facility operations:

- Protective fencing will be placed along the root protection zone (5 feet outside the tree dripline and a minimum of 15 feet from the trunk) of oak trees that are adjacent to construction or storage/staging areas.
- Contaminated runoff and soils will not be introduced into the dripline of individual oak trees or oak woodlands.
- Modifications to existing topography that allow water to either pool under oak trees or cause soil erosion within the dripline will be avoided.
- Oak trees that are adjacent to construction sites will be sprayed with water on an as-needed basis to prevent dust accumulation on leaves.
- No pruning of any trees will be allowed without consultation by a Certified Arborist. A Biological Monitor/Arborist will be present, as needed, during construction activities to prevent any direct impacts to oak woodland resources.

Native Grassland/Special Status Plant Species

A total of 0.07 acre of southern coastal needlegrass grassland is located within the fuel modification zone for the proposed project. This area is the only vegetation type on the project site with potential to support thread-leaved brodiaea, intermediate mariposa lily, and many-stemmed dudleya. Fuel modification requires the removal or thinning of shrubs; however, it does not require the removal of herbaceous growth, including native grasses and herbs. Therefore, the proposed project would not be expected to remove the southern coastal needlegrass grassland, although this area may be disturbed by periodic mowing or weed abatement, which may disturb the grassland and impact special status plant species. Impacts on southern coastal needlegrass grassland and special status plant species would be considered potentially significant. If mowing southern coastal needlegrass grassland is performed as part of fuel maintenance activities, the following measures would be required to reduce impacts to less than significant:

- A section will be added to the HMMP to address maintenance activities within the southern coastal needlegrass grassland area. The plan will identify modifications necessary to current maintenance activities to minimize effects on native grasses and herbs. This may include hand weeding; mowing after native grasses have already set seed for the year; biological monitoring during weed abatement activities; or other appropriate measures to protect these resources. The HMMP shall be prepared by a qualified Biologist and will be submitted to the County for review and approval to verify

that native grassland has been adequately preserved and/or mitigated prior to the issuance of a grading permit.

- If the southern coastal needlegrass grassland would be removed (e.g., mowing for fuel modification purposes), focused surveys for special status plants will be conducted within the impact area during the peak flowering period (to be determined by monitoring a reference population). The special status plant surveys will follow the most current survey guidelines (CDFG 2009 or subsequent guideline updates). If any of these species are located within the impact area, the impact would be considered potentially significant, depending on the status of the species and the number of individuals observed. If practicable, the project boundary will be adjusted to avoid impacts on these species. The CNPS does not support any mitigation for special status plants other than avoidance. If the impact is determined to be significant and avoidance is not possible, a strategy including the following measures will be developed based on the most current guidelines (CDFG 2009 or subsequent updates):
 - Avoiding impacts to species to the extent possible through project planning;
 - Minimizing impacts;
 - Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment;
 - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the project; and
 - Compensating for the impact by replacing or providing substitute resources or environments.

If thread-leaved brodiaea is present in the impact area, the project should be redesigned to avoid impacts on this species. If avoidance is not feasible, the Applicant will obtain authorization from the U.S. Fish and Wildlife Service (USFWS) and the CDFG to impact this species. A mitigation plan will be developed in accordance with and approved by the USFWS and the CDFG. Specific measures including but not limited to avoidance, minimization, and compensation will be determined through consultation with the resource agencies. A detailed mitigation plan will be prepared by a qualified Biologist for USFWS and CDFG approval.

The intermediate mariposa lily is addressed in the Central-Coastal NCCP/HCP as an Identified Species that is covered in accordance with the “conditions of coverage” set forth in Section 8.3.2 of the NCCP/HCP IA. If less than 20 individuals of this species are located in the impact area, the impact would be considered fully covered by the County’s participation in the NCCP/HCP, and no further mitigation would be required. However, if more than 20 individuals of this species are located within the impact area, the impact would be considered significant. If avoidance is not feasible, the County will obtain authorization from the USFWS and the CDFG to impact this species. Under the NCCP/HCP IA, a mitigation plan will be developed in accordance with and approved by the USFWS and the CDFG. Specific measures including but not limited to avoidance, minimization, and compensation will be determined through consultation with the resource agencies. A detailed mitigation plan will be prepared by a qualified Biologist for USFWS and CDFG approval.

If other special status plant species are located, their rarity and abundance will be evaluated by the Project Biologist. If the finding is considered to be significant, appropriate mitigation will be implemented. Specific measures—including but not limited

to avoidance, minimization, and compensation—will be determined through consultation with the resource agencies. A detailed mitigation plan will be prepared by a qualified Biologist for County approval.

Special Status Wildlife Species

No Threatened or Endangered wildlife species would be expected to occur on the project site due to lack of suitable habitat. Therefore, there would be no impact on these species and no mitigation would be required.

Nesting Birds

Vegetation on the project site could support nesting birds. The Migratory Bird Treaty Act (MBTA) protects the taking of migratory birds and their nests and eggs. Section 8.3.7 of the NCCP/HCP IA authorizes participating landowners to take species covered by the permit; any such take will not be in violation of the MBTA of 1918, as amended (16 *United States Code* [USC] §§703–712). However, in order to minimize impacts on nesting birds, we recommend that vegetation removal and weed abatement be conducted between September 16 and February 14, which is outside the peak nesting season (February 15–September 15), to avoid impacts on nesting birds. If vegetation removal or weed abatement needs to be conducted within this time period, a pre-activity nesting bird survey will be required prior to vegetation removal activities, as described below:

- To the extent practicable, vegetation removal/weed-abatement activities will occur from September 16 to February 14, which is outside the peak bird nesting season (February 15–September 15). If these activities cannot occur outside this time frame, a nesting bird survey will be conducted by a qualified Biologist within three days prior to the onset of vegetation removal/weed-abatement activities. The nesting survey shall be provided to the Manager, Permit Services, prior to the commencement of any grading activity for the bridges. If no active nests are found, no further mitigation would be required.

If nesting activity is present on the project site, the active site will be protected until nesting activity has ended to ensure compliance with the MBTA. To protect the nest, the following restrictions will be required until the nest is no longer active, as determined by a qualified Biologist: (1) clearing limits will be established (25–200 feet, depending on the sensitivity of the species) in any direction from any occupied nest and (2) access and surveying will be restricted within the buffer. Any encroachment into the buffer area around the known nest will only be allowed if it is determined by a qualified Biologist that the proposed activity will not disturb the nest occupants.

Indirect Impacts

Wildlife Movement

The proposed project would remove or thin the understory of the oak woodlands on the project site during fuel maintenance activities, but would not remove trees for fuel modification purposes. The proposed project includes the construction of a gazebo, but this structure would be located in areas that have already been cleared and graded for this purpose and are currently affected by human activity. The replacement of the existing bridges/culverts with free-span bridges would allow wildlife to move more freely along the creek bottom, which would be considered a beneficial impact of the project. Following project implementation, the project site would be improved with respect to wildlife movement; therefore, the impact would be considered beneficial.

Nesting Raptors

Vegetation on the project site could support nesting birds. The MBTA protects the taking of migratory birds and their nests and eggs. Section 8.3.7 of the NCCP/HCP IA authorizes participating landowners to take species covered by the permit; any such take will not be in violation of the MBTA of 1918, as amended (16 USC §§703–712). However, in order to minimize impacts on nesting birds, we recommend that vegetation removal and weed abatement be conducted between September 16 and February 14, which is outside the peak nesting season (February 15–September 15), to avoid impacts on nesting birds.

Raptor species (i.e., birds of prey) have potential to nest in the woodland vegetation types on the project site. Active raptor nests are protected by Sections 3503, 3503.5, and 3513 of the *California Fish and Game Code*. The loss of any active raptor nest would be considered significant. Impacts on active raptor nests would be reduced to less than significant levels with the implementation of the following measure:

- Project construction activities will occur from July 1 to January 31, which is outside the raptor nesting season (February 1–June 30) to the extent practicable. If these activities cannot occur outside this time frame, a nesting raptor survey will be conducted by a qualified Biologist within seven days prior to the onset of construction activities. Any raptor nest found during survey efforts (common or special status) will be mapped on the construction plans. If no active nests are found, no further mitigation would be required. Results of the survey will be provided to the CDFG.

If nesting activity is present on the project site, the active site will be protected until nesting activity has ended to ensure compliance with Section 3503.5 of the *California Fish and Game Code*. To protect the raptor nest, the following restrictions will be required between February 1 and June 30 (or until nests are no longer active, as determined by a qualified Biologist): (1) clearing limits will be established a minimum of 300 feet in any direction from any occupied nest and (2) access and surveying will be restricted within 200 feet of any occupied nest. Any encroachment into the 200- to 300-foot buffer area around the known nest will only be allowed if it is determined by a qualified Biologist that the proposed activity will not disturb the nest occupants.

Water Quality

Impacts on biological resources in the vicinity of the project site could occur as a result of changes in water quality. During construction, runoff carrying excessive silt or petroleum residues from construction equipment could potentially impact water quality and, in turn, affect plant and wildlife species using the habitats downstream of the proposed project. Impacts on drainage would be considered potentially significant. These impacts would be reduced to a less than significant level with incorporation of the following mitigation measure:

- Prior to construction of any new structures, the Applicant will apply for coverage under the State Water Resources Control Board's General Permit for Storm Water Discharge Associated with Construction Activity (Construction Activities General National Pollutant Discharge Elimination System [NPDES] Permit) and will comply with all the provisions of the permit, including the development of a Storm Water Pollution Prevention Plan, which includes provisions for the implementation of Best Management Practices (BMPs) and erosion-control measures.

Noise/Human Activity

Noise levels on the project site may increase substantially over present levels during construction of new structures. During construction, temporary noise impacts have the potential to disrupt foraging, nesting, roosting, and denning activities for a variety of wildlife species. Wildlife species stressed by noise may disperse from the habitat in the vicinity of the proposed project. Although this impact would be considered adverse, construction activities would be limited in duration and human activity on the project site is already relatively high. Therefore, this impact would be considered less than significant.

Invasive Exotic Plant Species

The proposed project includes planting native riparian plant species along Aliso Creek as retroactive mitigation for the loss of riparian resources resulting from the previously conducted vegetation removal. This would be considered a beneficial impact of the project. Additionally, ongoing operations may include supplemental planting of ornamental plants in project landscape areas. In order to ensure that proposed planting does not include ornamental species that are known to be invasive (e.g., Japanese honeysuckle, fan palm, and periwinkle, among others) that could escape into natural areas and degrade the native habitats downstream, the following measure is recommended:

- Landscape planting palettes will be reviewed by a qualified Biologist to ensure that no invasive, exotic plant species are used in any proposed landscaping. Landscape palettes should include native species as much as possible, as well as non-invasive ornamental species.

Thank you for the opportunity to prepare this Letter Report. If you have any questions or comments, please contact Amber Oneal at (714) 444-9199.

Sincerely,

BONTERRA CONSULTING



Melissa A. Howe
Associate Principal, Restoration Ecology



Amber S. Oneal
Senior Project Manager, Biological Resources

Enclosures: Exhibits 1, 2, 3, 4, 5, and 6

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- BonTerra Consulting. 2012a. *Jurisdictional Delineation Report Rancho Las Lomas Project, Orange County, CA*. Irvine, CA: BonTerra Consulting.
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Regional Location

Rancho Las Lomas

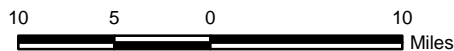
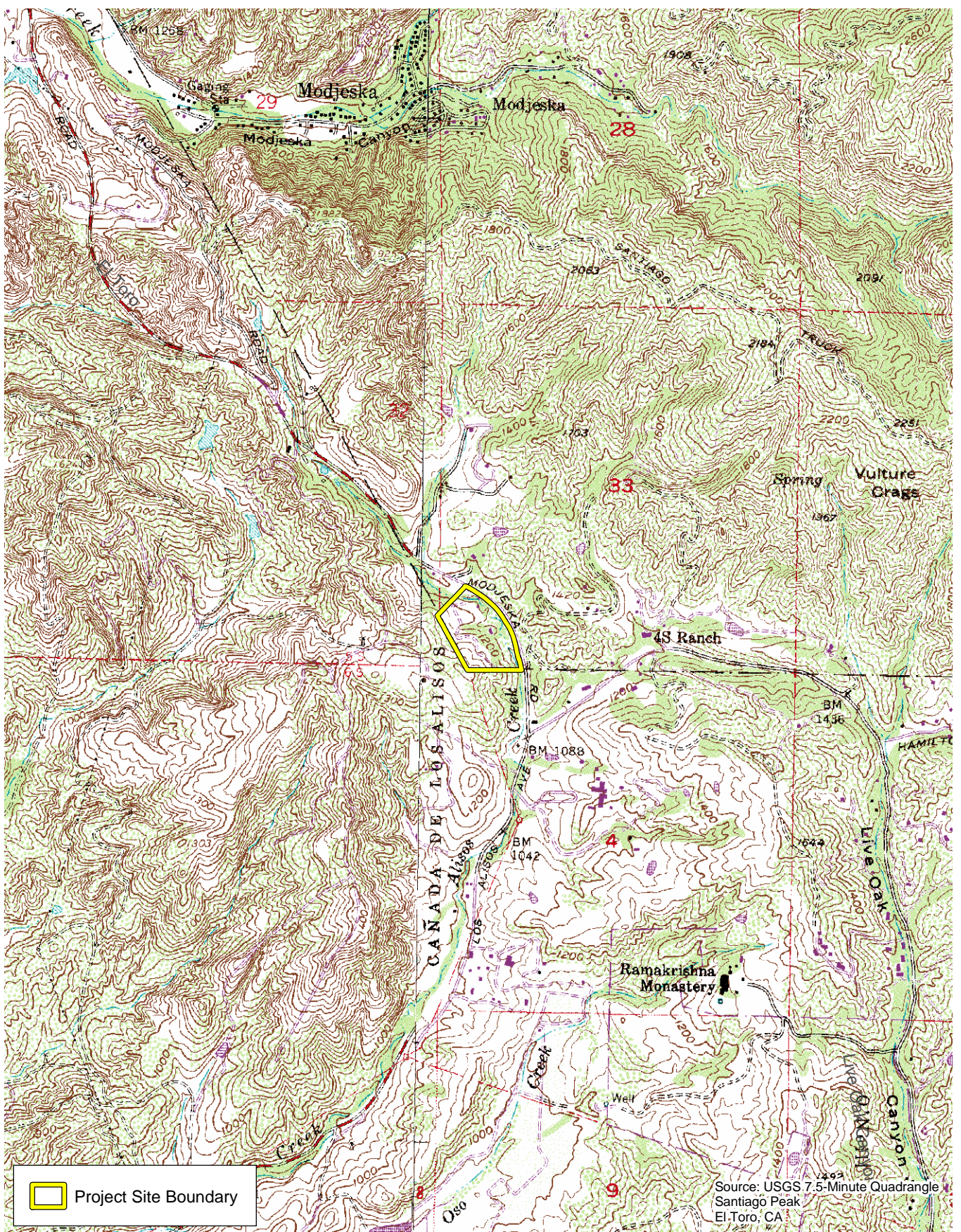


Exhibit 1

Bonterra
CONSULTING

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Local Vicinity

Rancho Las Lomas

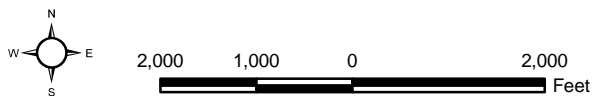
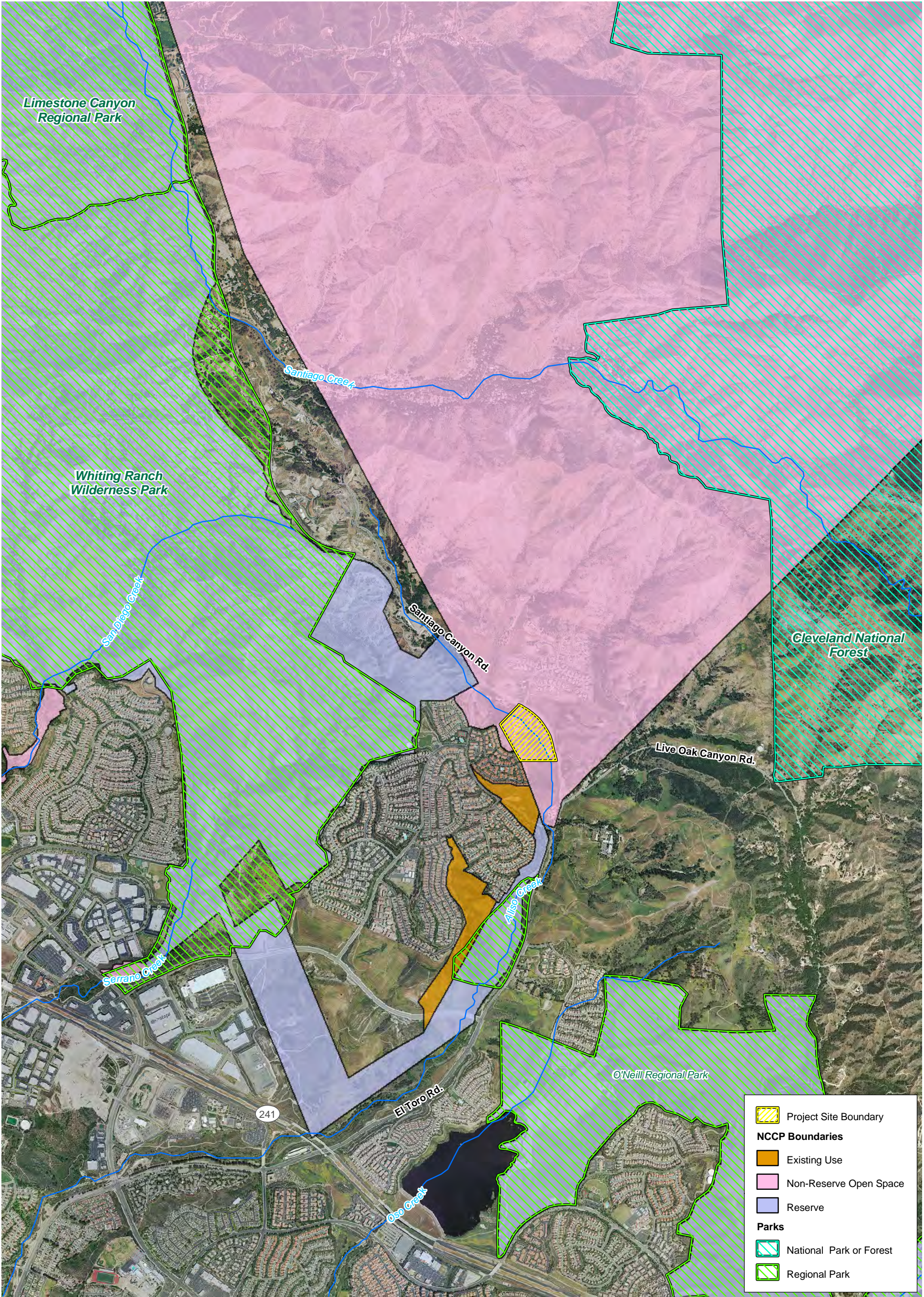


Exhibit 2

Bonterra
CONSULTING

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Project Site Boundary

NCCP Boundaries

Existing Use

Non-Reserve Open Space

Reserve

Parks

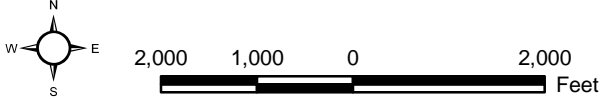
National Park or Forest

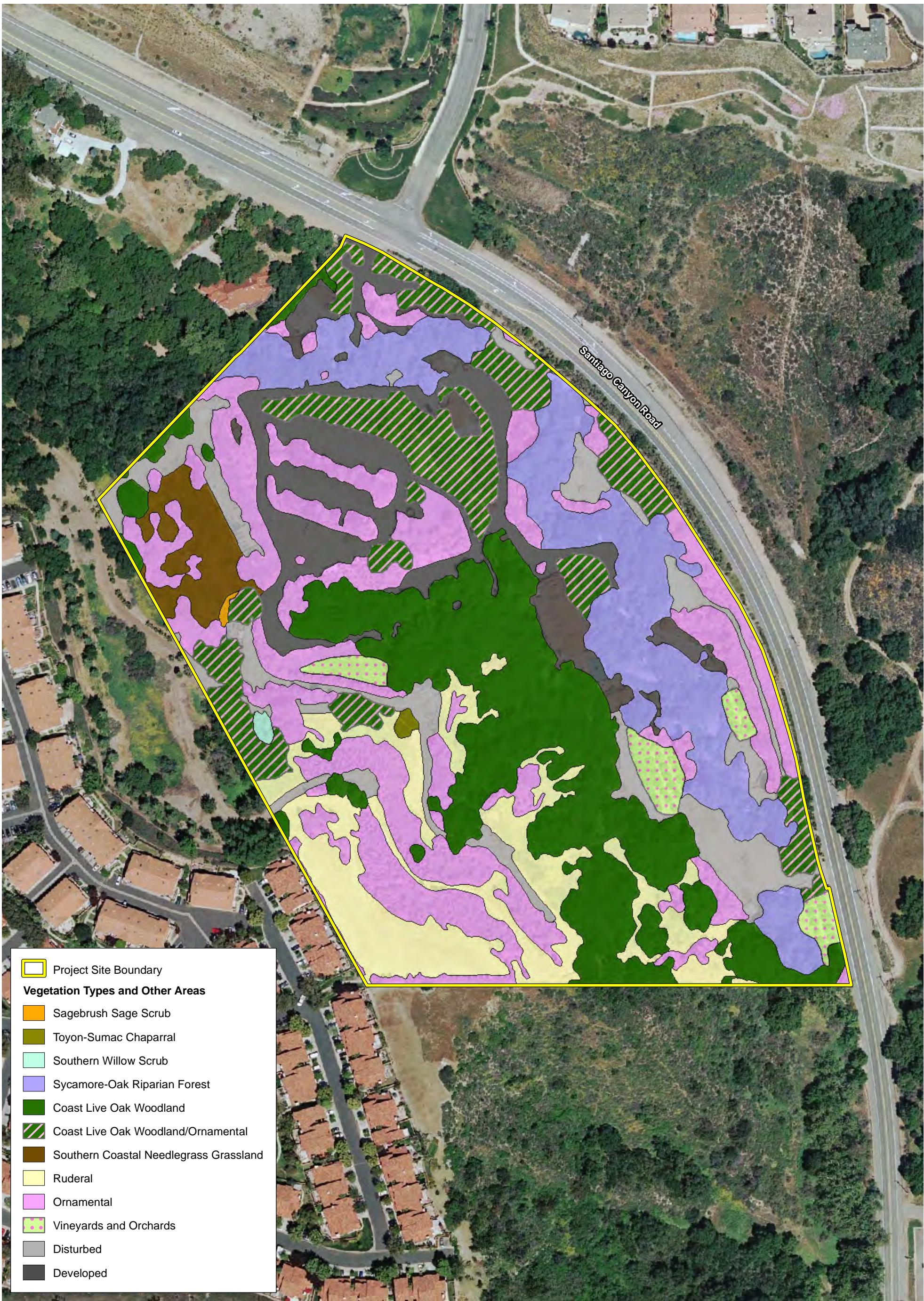
Regional Park

NCCP/HCP Designations

Exhibit 3

Rancho Las Lomas





Biological Resources

Rancho Las Lomas

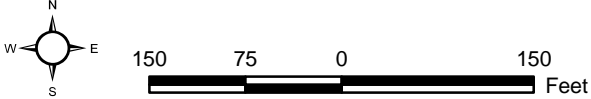
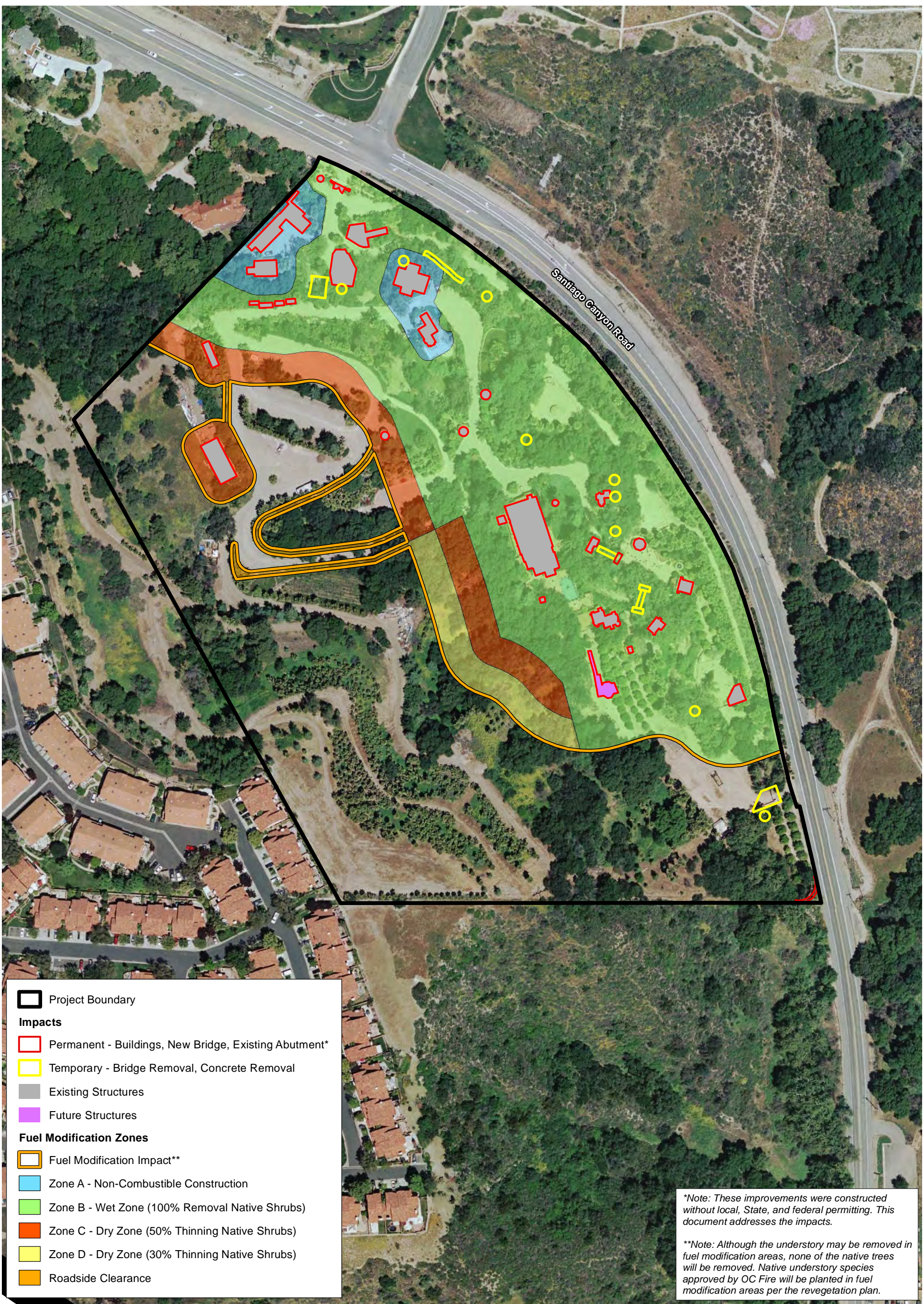


Exhibit 4





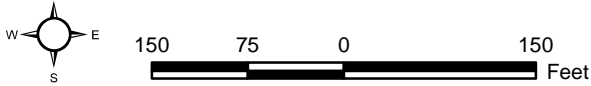
- Project Boundary
- Impacts**
- Permanent - Buildings, New Bridge, Existing Abutment*
- Temporary - Bridge Removal, Concrete Removal
- Existing Structures
- Future Structures
- Fuel Modification Zones**
- Fuel Modification Impact**
- Zone A - Non-Combustible Construction
- Zone B - Wet Zone (100% Removal Native Shrubs)
- Zone C - Dry Zone (50% Thinning Native Shrubs)
- Zone D - Dry Zone (30% Thinning Native Shrubs)
- Roadside Clearance

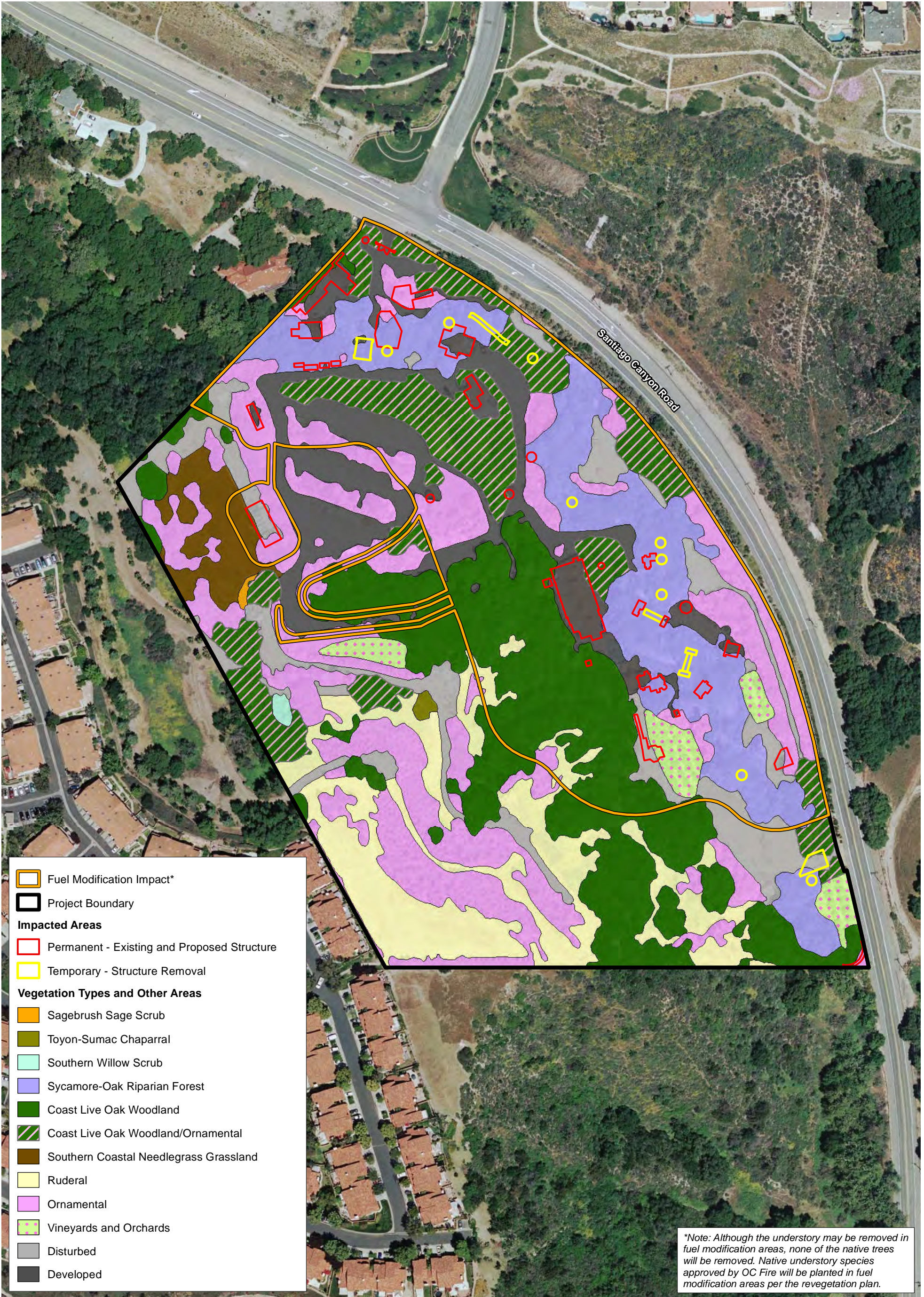
**Note: These improvements were constructed without local, State, and federal permitting. This document addresses the impacts.*

***Note: Although the understory may be removed in fuel modification areas, none of the native trees will be removed. Native understory species approved by OC Fire will be planted in fuel modification areas per the revegetation plan.*

Fuel Modification Areas

Rancho Las Lomas





Project Impacts

Rancho Las Lomas



Exhibit 6



